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THEORIES OF PANIC BEHAVIOR: A REVIEW*

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A. INTRODUCTION

In stress situations, one aspect of social behavior that has been subjected to little experimental investigation is panic behavior. In the literature relating to the nonadaptive behavior of panic, there are but two experimental investigations of this phenomenon (6, 13). By far the great majority of the literature consists of post hoc impressionistic reflections that contain little substantive material amenable to systematic, analytic interpretation (14, 15).

The problem of panic behavior has always been of importance in the military and in natural and man-made disasters among the civilian populace. Now, however, with the greatest disaster threat of modern times—the possibility of a nuclear holocaust—the phenomenon assumes a more intense criticality. Since World War II there has been speculation, in both popular and professional literature, as to what the last days on earth would be like if a nuclear war were unleashed. The essence of many of the articles for popular consumption is that there will be panic behavior on a nationwide level and that this panic behavior could cause more chaos and social disorganization than the physical effects of the bombs themselves (17, 18). On the other hand, much of the disaster literature makes the counterclaim that little panic behavior will occur; and that, only in isolated, local situations (9, 10, 16).

Of necessity both positions are based on little more than speculation for, with the exception of the experiences in Hiroshima and Nagasaki, there is little basis for sound prediction as to what might be the aftermath of such a holocaust. Because of this unresolved controversy and its practical implications, the problem of panic behavior merits serious, systematic, experimental investigation. Our understanding and prediction of the behavior of groups cannot be considered complete without the ability to predict those conditions which are likely to cause the group to function no longer or even to exist qua group.

As a prelude to a research program designed to investigate the role of certain variables in facilitating or minimizing panic behavior, the writer has re-

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viewed the theoretical formulations that attempt to explain this phenomenon of social disorganization.

As suggested by Brown (1), and Schultz (15), any discussion of panic behavior is incomplete unless the structure of the group (i.e., organized *vs.* unorganized) is taken into account. Observations of and generalizations about one such group will not necessarily apply to the other. An example will serve to emphasize this point. The perception of danger seems to be common to those theories concerned with unorganized groups. In an organized group, however, such as a military unit in combat, this condition would not apply as danger is ever-present, yet panic is relatively rare. McDougall (12) noted that organized groups are characterized by (*a*) continuity of existence, (*b*) awareness of membership, (*c*) interaction with other organizations, (*d*) a body of tradition, and (*e*) differentiation of functions. Unorganized groups, then, are characterized by the absence of the above. An example of an organized group is a military body. An example of an unorganized group is a street crowd. Thus, in considering the theories of panic, this distinction must be noted.

B. THE THEORETICAL POSITIONS

1. *Unorganized Groups*

McDougall considered panic to be the crudest and simplest example of collective mental life. He commented that:

. . . the sudden appearance of imminent danger may instantaneously convert any concourse of people into a crowd and produce the characteristic and terrible phenomena of a panic. In each man, the instinct of fear is intensely excited; he experiences that horrible emotion in full force and is irresistibly impelled to save himself by flight. The terrible driving power of this impulse, excited to its highest pitch under the favoring conditions, suppresses all other impulses and tendencies, all habits of self-restraint, of courtesy and consideration for others . . . (12, p. 24).

Thus panic was seen by McDougall to be the collective intensification of instinctive excitement, with its concomitant emotion of fear and its impulse to flight. This collective intensification is induced by emotional contagion or "primitive sympathy."

Hence, in a crowd situation, each individual perceives the expression (or expressions) of fear of his neighbors, which perception increases his own fear. For McDougall, this explained why a large group of people may engage in panic behavior in response to a threat that may be perceptible only to a small portion of that group.

LaPiere's analysis of panic behavior (11) viewed the reaction as a collective solution to the sudden adjustment problem created by a crisis. He noted the two origins of panic as (a) the occurrence of a crisis or danger situation and (b) the lack of regimental behavior or leadership for the crisis.

LaPiere suggested that the immediate antecedents of panic behavior are individual and not collective. When a crisis situation has occurred, social interaction is interrupted and the situation is momentarily (at least) reduced to an aggregate of shocked individuals, and all action is suspended. Following this, the members of the situation behave as isolated individuals, each trying to find an appropriate response to the crisis.

No aggregate of reacting individuals can, however, long refrain from interaction with one another, if for no other reason than that they are likely to come into physical contact with one another. Inevitably, therefore, the period during which members of a group react as individuals is brief and is followed by some form of collective behavior. Unless regimental leadership operates, the collective behavior will be panic in type. The immediate origin of panic behavior is, thus, seen to lie in the individual heterogeneous reactions of a group to crisis (11, p. 441).

In his analysis of *The Invasion from Mars* broadcast, Cantril (2) hypothesized that the panic reaction to the broadcast was due to the perceived threat to the well-being, and safety of the individual. As to what constitutes a personal threat to an individual, Cantril suggested that:

When an individual believes that a situation threatens him he means that it threatens not only his physical self but all of those things and people which he somehow regards as a part of him. This Ego of an individual is essentially composed of the many social and personal values he has accepted. He feels threatened if his investments are threatened, he feels insulted if his children or parents are insulted, he feels elated if his alma mater wins the sectional football cup. This particular pattern of values that have been introjected by an individual will give him, then, a particular Ego (2, p. 299).

A panic will occur according to Cantril, then, when a highly cherished value is threatened and when no reduction or elimination of the threat seems apparent. The behavior during panic is characteristically undirected and is functionally useless in terms of attempting to cope with the crisis.

Thus, Cantril posited that:

. . . the extreme behavior evoked by the broadcast was due to the enormous felt ego-involvement the situation created and to the complete inability of the individual to alleviate or control the consequences of the invasion. The coming of the Martians did not present a situation where

the individual could preserve one value if he sacrificed another. It was not a matter of saving one's country by giving one's life, of helping to usher in a new religion by self-denial, of risking the thief's bullet to save the family silver. In this situation the individual stood to lose *all* his values at once. Nothing could be done to save *any* of them. Panic was inescapable (2, p. 300).

That this terror reaction was not the response of all the radio audience was accounted for in terms of suggestibility. Cantril hypothesized the existence of background or antecedent factors that render some individuals more susceptible to panic terror than others. He defined these background factors in terms of a lack of critical ability and of certain personality characteristics that would render some people especially susceptible to belief and fright.

Mintz (13) hypothesized that intense emotion is not essential to panic behavior. Rather, he argued, panic is a function of the perceived reward structure of the situation. He believed that nonadaptive behavior arises from a breakdown in cooperation that then causes the panic flight to appear to be adaptive behavior, from the point of view of the individual. He noted that:

Cooperative behavior is required for the common good but has very different consequences for the individual depending on the behavior of others. Thus, at a theatre fire, if everyone leaves in an orderly manner, everybody is safe, and an individual waiting for his turn is not sacrificing his interests. But, if the cooperative pattern of behavior is disturbed, the usual advice, "Keep your head, don't push, wait for your turn and you will be safe," ceases to be valid. If the exits are blocked, the person following this advice is likely to be burned to death. In other words, if everybody cooperates, there is no conflict between the needs of the individual and those of the group. However, the situation changes completely as soon as a minority of people cease to cooperate. A conflict between the needs of the group and the selfish needs of the individual then arises. An individual who recognizes this state of things and who wants to benefit the group must sacrifice his own selfish needs (13, p. 575).

Mintz offered a series of experiments which partially verified his hypothesis.

The significant point of departure between Mintz's theory and those discussed earlier is that Mintz minimized the role of mutual emotional facilitation that played such a prominent role in the other theories. Also, Mintz did not assume the existence of alterations of individual personalities due to membership in a crowd. On the contrary, he suggested that people behave purely as individuals in accord with their own selfish needs.

Foreman's theory of panic (5) is not clearly defined as pertaining to either organized or unorganized groups. As will be discussed later, however, one of his conditions that relates to the direct cause of panic is the absence of pre-

pared or conventionalized behavior. As such behavior is characteristic of organized (e.g., military) groups, Foreman's theory will be treated in this section.

Foreman suggested the operation of certain background or preceding conditions that, while not capable of causing panic, would render individuals more highly prone to panic behavior. These background conditions were grouped into four types: (*a*) those, such as fatigue, that weaken individuals organically; (*b*) those, such as lack of information concerning attacks in war, that create acute emotional tensions or anxiety; (*c*) those, such as stranger status, that prevent or weaken group identifications; and (*d*) those, such as awareness of weapons like napalm or gas, that create chronic social unrest.

According to Foreman, the direct cause of panic is the linkage of a shock stimulus and certain reaction phases to that stimulus. The stimulus must be of sufficient intensity to compound terror responses and must be such that no conventionalized responses are adequate to cope with it. Such a stimulus will interrupt antecedent behavior and suspend all action.

Shock is the initial reaction phase to this stimulus. The disruptive influence of this shock will be greater when the following conditions are met: (*a*) inhibition of normal sensory functioning, (*b*) the ratio of individuals suffering immediate personal or property damage to the total population is greatest, (*c*) the response to institutionalized commands is reluctant or slow, (*d*) physical protection is not adequate, and (*e*) where affected individuals are in motion, particularly retreat, at the moment of the crisis stimulus.

The shock phase is quickly followed by confusion which is characterized by random and inconsistent attempts at interpretation of and adjustment to the crisis.

Foreman's third phase is terror.

Initial terror responses include shouts, screams, and excited physical movements. This is not a lull phase; it is a period of din. These indecisive acts of initial terror, if not immediately controlled by an overwhelming order-producing stimulus, compound into bedlam. Such reactions may be significant at first as releases for overwhelming tension; quickly, however, they serve as reinforcing stimuli for the terror of others and may be reflected back, circularwise, to reinforce the frenzy of the original actor. Linked in these ways, the terror of interacting individuals is heightened (5, p. 530).

2. *Organized Groups*

Freud (7) believed that panic was best studied in military groups. An army was considered by Freud to be an artificial group in that external force was required to keep it together and to maintain its structure. Freud hypoth-

esized that in such a group each individual becomes bound by libidinal ties both to the leader and to the other members of the group. A panic then arises when this group becomes disintegrated to the point where each individual becomes concerned with his own welfare and has no consideration for the other group members. "The mutual ties have ceased to exist and a gigantic and senseless dread (*angst*) is set free" (7, p. 46).

Thus, to Freud, panic results from a relaxation in the libidinal structure of the group and not from danger or a threat, per se, for this same army previously may have faced even greater danger with considerable success.

Along similar lines, Schultz (15) offered an explanation of panic in organized military groups, but he used concepts that were more operational in nature (e.g., group cohesiveness). He noted that Cartwright and Zander (3) defined a cohesive group as one in which all the members work together for a common goal and in which everyone is ready to assume responsibility for the group tasks.

The willingness to endure pain or frustration for the group is yet another indication of cohesiveness. Finally, we may conceive of a cohesive group as one in which its members will defend against external criticism or attack (3, p. 74).

Adding the notions (*a*) that the group may become a haven for protection from a threatening environment and thus become a means to satisfy the need for security (8) and (*b*) that there are external restraints that serve to keep the group intact, Schultz suggested that a small army unit seemed to fit reasonably the definition of a cohesive group.

It was further assumed that the small cohesive army unit could be considered a primary group in that it is characterized by an intimate, face-to-face relationship, a warm emotional tone, and involves close physical proximity (4). In a military environment, the individual soon finds himself isolated from his civilian primary group. Schultz suggested that, as a result, the individual soldier comes to depend more and more upon his military primary group for satisfaction of basic needs of affection, security, status, etc. Serving to reinforce the satisfactions and the demands and expectations of this group are the officially prescribed rules and external authority that serve to hold the individual's aggressiveness in its proper context.

Accordingly, Schultz hypothesized that the social disorganization of panic in organized collectivities is dependent to a large measure on the capacity of the immediate primary group to avoid social disintegration. When this primary group is able to satisfy adequately the individual's physiological and social-

psychological needs, the element of self-concern is minimized. Conversely, when the primary group life is disrupted, an intensity of preoccupation with physical survival develops, and the attraction to remain a member of the group is minimized.

What disrupts the primary group life and disintegrates the group cohesion? In attempting to answer this, Schultz suggested the operation of one set of factors that seem capable of predisposing individuals in the group to panic flight and another set of factors that may operate to precipitate the panic flight.

The predispositional variables are not causal factors of panic, but render individuals and the group more susceptible to panic. "These predispositional variables would seem to operate to weaken men both physically and psychologically and so cause them to be more easily influenced by rumor and suggestion and render them less capable of rationally interpreting ambiguous situations" (15). The precipitating variables are capable of causing panic flight either in combination with the predispositional variables or independently, if of sufficient intensity.

C. DISCUSSION

In attempting an evaluation of the foregoing theories of panic behavior, we must again emphasize the distinction between organized and unorganized collectivities. It would be pointless for us to compare a theory designed to explain panic in organized groups with one that is restricted to unorganized groups.

All the theories dealing with panic in unorganized groups utilize some combination of the following four variables: (*a*) perception of a crisis situation, (*b*) antecedent or background factors, (*c*) mutual emotional facilitation or behavioral contagion, and (*d*) breakdown in mutual cooperation. Possession of certain background factors seems to render some individuals more prone or susceptible to panic flight once a crisis situation has been perceived and defined as such. Panic behavior then spreads from perhaps only a minority of the group to the remainder of those individuals in physical proximity. Finally, the panic behavior seems to lead to the breakdown in mutual consideration with its concomitant "every-man-for-himself" attitude.

The one variable invoked by all five theorists dealing with unorganized groups is perception of a crisis situation. Evidence suggests, however, that the existence of a crisis of itself, does not always lead to panic flight. Undoubtedly, the atomic bombing of Hiroshima was perceived as a crisis by the inhabitants, and yet Janis (9) found only one clearly established instance of the non-rational escape reaction of panic. That perception of a crisis is a necessary

condition for panic to develop cannot be denied, but the literature on panic implies that other variables must be operative in concert with perception of a crisis for panic to occur.

The variable of mutual emotional facilitation was invoked by McDougall (12), LaPiere (11), and Foreman (5). Cantril (2) did not discuss the possible role of this factor, while Mintz (13) did not believe it at all essential to the genesis and spread of panic behavior. The three theories that did utilize this factor noted that it follows the perception and definition of a crisis *qua* crisis. The theories are in agreement that emotional facilitation operates to compound the terror and to spread the terror among all those present in the crowd through some form of behavioral contagion. Its suggested role, then, would seem to be that of facilitating and possibly precipitating panic flight. The individual perceives the overt fear and terror manifestations of his fellows. This reinforces and perhaps gives expression to his own fear. Thus, the mutual emotional facilitation functions as a terror-reinforcing agent. Anecdotal evidence of panic situations (e.g., theatre fires) suggests that if all remain calm, these expressions of calmness will spread through the crowd and panic will be averted. What causes a few individuals in a crowd to manifest terror behavior overtly and in so doing cause the spread of this behavior throughout the entire group?

To Cantril and Foreman, the answer lies in the background or antecedent factors of the individual. The individual is more suggestible (Cantril) or weakened physically or emotionally (Foreman), so that he is less capable of rationally interpreting the stimulus situation. As discussed earlier, once a few individuals behave in extreme fashion the remainder may quickly follow suit, through behavioral contagion. Thus, research on the individual threshold for mob behavior may be in order to attempt to identify characteristics of the "panic-prone" individual (1).

A final variable, breakdown in mutual consideration, is discussed by McDougall, LaPiere, Mintz, and Foreman. Cantril does not discuss this point. Analysis of the theories implies that panic is not a result of breakdown in mutual consideration, but rather its cause. Mintz, however, suggests that panic arises only when a few individuals have ceased to cooperate, thus causing the perception of an unstable reward structure for all involved.

It would be gratuitous at this stage of our understanding of panic to suggest that any one of these four variables is decidedly more influential than the others. The only conclusion that might be drawn tentatively is that panic proceeds more readily when all of these variables operate in interaction with

one another. It is noted that Foreman is the only theorist to invoke all four of these factors.

Mintz's theory of the perceived reward structure of the situation is (to date) the only theory of panic to have received some experimental verification. However, one of his conclusions would appear to be open to question; i.e., that emotion and behavioral contagion are not essential to panic. Examination of his experimental design reveals that the variable of emotional facilitation was introduced in his control condition only (those groups in which there were no rewards and fines and which were told that the experiment was a study of cooperation). In these groups, this variable did not bring about the nonadaptive behavior of panic. In the experimental groups (those performing the task under the system of rewards and fines), this variable was not used. It was in these "reward-and-fine" groups that the panic behavior invariably occurred, thus lending support to Mintz's major theory. If the emotional-facilitation variable had been introduced in these groups, might not the intensity of the panic behavior have been even greater? According to McDougall, LaPiere, and Foreman, it would have been. The question remains for experimental investigation to answer.

With respect to panic in organized groups, both Freud (7) and Schultz (15) minimize the role of crisis or danger as being of paramount importance as causal factors. Both theories stress the breakdown in mutual consideration: Freud, in terms of the severing of libidinal ties between individuals; Schultz, in terms of the shattering of the bonds of group cohesiveness in the military "primary group."

But what causes this breakdown in group structure or mutual consideration? Freud did not address himself to this problem. Schultz, on the basis of historical anecdotal "data," considered the breakdown to result from a number of background or predispositional variables or precipitating variables.

The value of theorizing lies in its heuristic implications for future research. Mintz's simulated-panic situation seems to offer a systematic and well-controlled experimental methodology for much-needed further research in this area. The fact that Mintz was able to produce the same nonrational, nonadaptive behavior as has been noted in real-life panic situations (using what was certainly a minimal fear stimulus) is of great significance for panic research.

Some of the theories discussed are more amenable to experimental investigation than others. For instance, the variables noted by Mintz and Schultz are capable of operational definition and of experimental manipulation.

Theories such as those discussed should serve to stimulate and direct our

thinking and research efforts in this all-important and oft-neglected area of social behavior. If they have accomplished this end, they have served their purpose.

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